REMARKS

Claim 1 has been amended to include the features of claim 9, and therefore this amendment does not add matter to the application. Original claim 9 has been deleted. Also claims 2 to 6 have been amended to be consistent with amended claim 1.

Claim 1 has also been amended to include the features of original claim 7 and therefore this does not add matter to the application. Original claim 7 has been deleted. Also claim 8 has been amended to give consistency with amended claim 1.

Original claim 12 has been amended to correspond with new claim 1 by adding the features of a second signature, and updating the first signature by a weighted averaging with the first. Basis for this amendment is found at page 44-45 and 49-51 of the specification.

Independent claims 13 and 22 have also been amended to correspond with amended claim 1. Basis for these amendments is found in the specification as a whole.

In paragraph 1 of the Office Action a certified copy of one of the priority documents is requested. This has now been filed.

In paragraph 2 of the Office Action the specification is objected to because figures 5, 14 and 18 are not mentioned and explained in the specification.

The Examiner is directed to page 43 last paragraph where figure 5 is mentioned and explained and also to page 36, second paragraph and page 39, second paragraph, where figures 14 and 18 respectively are mentioned and explained.

In paragraph 3 of the Office Action, claim 8 has been rejected as lacking in clarity. Claim 8 has been amended to make it clear that it is a method claim in structure and content.

In paragraph 4, claims 1 to 22 have been rejected under 35 U.S.C. §101 because they are not limited to a practical application in the technological arts.

It is respectfully submitted that the claims as amended are acceptable under 35 U.S.C. §101, following the recent decisions in AT&T Corp. v Excel Communications Inc. Fed. Cir, No. 98-1338, 4/14/99 and State Street Bank and Trust Co. v Signature Financial Group Inc., 149 F.3d 1368, 47 USPD2d 1596 (Fed.Cir. 1998) (56 PTCJ 346, 7/30/98).

In AT&T Corp v Excel., Judge Plager upheld AT&T Corp's claims to a process which applied Boolean Algebra to data about telephone call recipients to create a signal useful for billing purposes. The court held that because the claimed process applied the mathematical principle to produce a useful, concrete, tangible result, it fell within the scope of section 101. Similarly, in State Street, the court found that the claimed data processing system for implementing a financial management structure satisfied section 101 because it was a practical application of a mathematical algorithm to produce a useful and tangible result.

In the present application, the process of amended claim 1 produces the useful, concrete, tangible result of detected anomalies in the transmission of messages by an entity. By parity of reasoning it is submitted that amended claim 1 falls within the scope of section 101. Independent claims 10, 11 and 20 (as amended) also specify this useful result and also fall within the scope of section 101 for the same reasons.

Claim rejections 35 USC 102

In paragraph 2 on page 4 of the Office Action, claims 1-8 and 12 have been rejected as being anticipated by Hunt et al. U.S. Patent No. 5,365,574.

As acknowledged by the Examiner (on page 5 of the Office Action) Hunt et al. does not express disclose the feature of claim 9, of updating a signature by a weighted averaging with a second signature. This feature has been incorporated into new claim 1 which is therefore not anticipated by Hunt et al. Claims 2 to 7 are therefore also allowable over Hunt et al by virtue of their dependency.

Independent Claim 12 has been amended to correspond with new claim 1 and so claim 12 is also distinguishable from Hunt et al.

In paragraph 4 on page 5 of the Office Action, claims 9, 13-19 and 22 have been rejected as being obvious from Hunt et al combined with Peterson et al. (US 5,067,095).

The Examiner states that Hunt et al. discloses the use of neural networks; however, this is not the case. Neural networks are not mentioned anywhere in the Hunt et al reference. Indeed the voice recognition algorithm of Hunt et al uses statistical techniques (column 6 lines 44 – 48) rather than a neural network. Also, the voice verification algorithm of Hunt et al involves computing Euclidean distances (column 9) rather than using a neural network.

Peterson et al. describes a very complex, hierarchical, self-organizing neural network system. Self-organizing neural networks differ considerably from the neural networks described in the present application. For example, in the present application, neural networks are used which must be trained in advance of their use (e.g. page 28) whereas self-organizing neural networks do not require training before use. Because of this a person of ordinary skill in the art would not have considered the Peterson et al reference when developing the present invention.

In the present application the problem of dealing with data that contains information both about macro behavior such as long term trends and micro behavior such as short term fluctuations is addressed (see page 4 paragraph 2). This problem is solved by creating two signatures, one for a long period of time and one for a shorter period of time (page 44 of the specification) and then updating these using a weighted averaging (page 45 of the specification) and specified in amended claim 1.

Peterson et al does not address the problem of dealing with both macro and micro behavior in data. Rather Peterson et al aims to provide a neural network which can take an input of low information content and produce an output of higher information content and vice versa.

Because of this a person of ordinary skill in the art would not have considered Peterson et al when developing the invention of amended claim 1.

Even if the skilled person in the art had considered Peterson et al. he would not have been directed to use 2 signatures and update these as specified in amended claim 1. This is because Peterson et al does not describe creating signatures, or their equivalent, and then combining signatures using a weighted averaging. Peterson et al does refer to synapses 98, 100 and 102 (column 6 lines 23-25) as being weighting circuits but this is a standard form for a node in a neural network and does not relate to combining signatures. Also claim 6 of Peterson et al mentions an averaging circuit but again this does not relate to combining signatures. Because of this it would not have been possible for a person of skill in the art to reach the invention of new claim 1 from Hunt et al and Peterson et al.

Claims 13-19 and 22 also include the features of 2 signatures which are updated by a weighted averaging. Therefore, by parity of reasoning, these claims are distinguishable from and allowable over Hunt et al and Peterson et al.

In paragraph 5 on page 6 of the Office Action, claims 10, 11, 20 and 21 have been rejected as being obvious from Hunt et al and Peterson et al. These claims all specify use of a predictive model in the data deriving step. However, neither Hunt et al nor Peterson et al describe predictive models. Hunt et al relates to a voice recognition and verification system; neither of these systems is arranged to predict or forecast future events. Peterson et al describes a self-organizing neural network system for signal processing, such as speech recognition and synthesis (column 4 last paragraph). Prediction or forecasting of future events or items is not mentioned

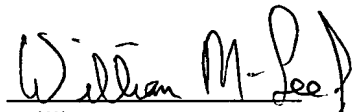
in Peterson et al. Because of this, the skilled person in the art would not have been able to reach the invention of claims 10, 11, 20 and 21 from Peterson et al and Hunt et al.

In view of the foregoing, it is submitted that the application, as amended, is now in condition for allowance. The Examiner's further and favorable reconsideration in that regard is urged.

In view of the filing of this response during the fourth month following the Examiner's Office Action, an appropriate petition for a one month extension of time is also submitted herewith.

July 23, 1999

Respectfully submitted,



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